**Fluorine Azide and Fluorine Nitrate:**

**Structure and Bonding**

Please use the questions from the pre-reading assignment and complete these accompanying questions to *Inorganic Chemistry* **1988**, *27*, 755-758. <https://doi.org/10.1021/ic00277a035>

1. What reason did the authors give as the motivation for studying the structure of fluorine azide and fluorine nitrate using computational methods instead of employing synthesis and characterization methods?

2. What information is contained in Table I and Table II and how were these data used by the authors?

3. Correlate the three resonance contributors you drew in the pre-reading assignment to the 3 Lewis structures for FN3 labeled **I**, **II**, and **III** on page 755 of the article. Label the 3 nitrogens Na, Nb, and Nc, moving from left to right in the structure.

1. Why is Lewis structure **I** the major contributor?
2. Why is Lewis structure **III** the minor contributor?

4. The structural data for which compound was used to justify the inclusion of Lewis structure **III**?

5. How were the authors able to rule out a cyclic structure for FN3?

6. On page 756, structures labeled “**IV**” in the first column show the Lewis structure of FNO and a no-bond resonance contributor. Compare these structures to those you generated in the pre-reading assignment. Do they match?